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June 20, 1993

Dr. Andre van Tilborg
ONR Computer Science division
Code 1133
800 N. Quincy St.
Arlington, VA 22217-5000

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S A D

Dear Dr. van Tilborg;

Attached is a copy of the second quarter report of the ECSU-ISSP Home Institution Support Program. The report follows the format of the annual report form supplied last year by your office.

As you read this report I think you will see that although the ECSU Home Support Program was not a big project and had limited scope, that it has been well managed and has produced some quite significant results. This year we had four students to graduate in May 1993: Renee Basnight, Wayman White, Stephanie Vaughan and Deborah Jones. These ISSP students are just a sampling of the very talented and highly motivated minority ECSU students.

1. Renee Basnight has attended the ISSP program for three summers. She is currently taking graduate computer science classes at Hampton University. Renee graduated cum laude from ECSU and plans to attend graduate school at the University of Alabama at Birmingham.
2. Stephanie Vaughan completed all her course work in December of 1992. During the Spring semester she completed an internship with the Science and Engineering Research Program (SERS). Stephanie graduated cum laude from ECSU. She attended the ISSP program during the summer of 1992. Stephanie plans to attend graduate school at the University of Alabama at Birmingham.
3. Deborah Jones has attended the ISSP program for the past two summers. At this time she has no plans to attend graduate school in the fall. She is however taking graduate computer science classes this summer at Hampton University.
4. Wayman White graduated cum laude in computer science. He completed an internship with the area Coast Guard Base during Spring semester 1993. Wayman is awaiting information on his graduate school application to the University of Alabama at Birmingham.

Hampton University made four awards during the 1992 ISSP program. Those awards went to the students who made the most outstanding research presentations. One award was given in each of the areas of Physics, Chemistry,

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Mathematics, and Computer Science. Of the four awards given, ECSU students received three(Karen Felton in Chemistry, Willie Basnight in Computer Science and Tammy Askew in Mathematics). I must note that we did not have a physics major to attend the 1992 ISSP program.

Elizabeth City State University submitted a proposal entitled "Nurturing ECSU Research Talent (NERT)" in response to the recent DOD Infrastructure Support Program for HBCU/MIs. We propose to expand the scope of the current program to include faculty, precollege and non-ISSP ECSU students. The number which DOD has assigned to this proposal is #004. This will be an initiative directed specifically towards increasing the number of underrepresented minorities obtaining undergraduate and graduate degrees in CCMP fields.

The proposed program will have six components:

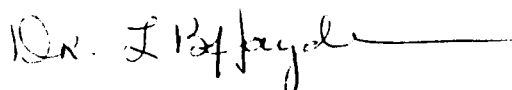
- Component #1: State-of-the art computer equipment
- Component #2 A visiting lecturer series
- Component #3: Students pay & faculty release time
- Component #4 Student/sponsor travel program
- Component #5: Research training seminars
- Component #6: Precollege outreach

The first five components address ECSU infrastructure. The precollege component proposes first to enhance the ECSU Annual State Mathematics Contest in ways which will recognize the top minority mathematics precollege achievers in our 16 county region of North Carolina and encourage those minority participants who show potential. Also in the precollege component, we will provide a dial-up modem which will allow local school districts to access the resources of our campus and the North Carolina Supercomputer Center (NCSC).

Students who participate in the program will be encouraged to consider a careers as HBCU faculty. Students will also have the opportunity to earn enough to pay for their college expenses. We feel confident that with your support this proposal will be funded.

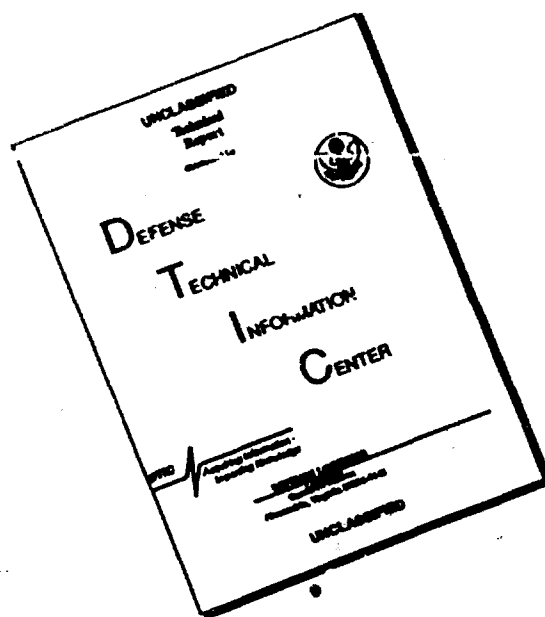
This is the opportunity for the seed, that ONR has planted at ECSU, to bloom.

Respectfully submitted,



Dr. Linda B. Hayden, PI

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1993 ANNUAL REPORT OF THE
ECSU HOME-INSTITUTION SUPPORT PROGRAM

SUBMITTED TO

THE OFFICE OF NAVAL RESEARCH

BY

ELIZABETH CITY STATE UNIVERSITY

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PART I: A succinct narrative which should summarize last year's objectives and accomplishments.

A. Specific program objectives for the past year (please restate the overall goals and specific objectives of your program. Be as quantitative as possible.)

PART IA.

The ECSU-ISSP Home Institution Support Program provides a strong home institution support environment, for Elizabeth City State University students participating in the HU-ONR Intensive Summer Studies Program (ISSP). This basis of support nurtures the research interest of our ECSU-ISSP students and better equips our students to gain as much as possible from the HU-ISSP experience. This program has three components :

- 1) Establishment of a Macintosh computer network.
- 2) A Visiting Lecturer Program
- 3) A student/sponsor travel program

VISITING LECTURER PROGRAM

The Visiting Lecturer Program has provided funds to bring 5-6 speakers to our campus. These outside speakers were chosen to stimulate faculty research and give additional insight to students. Students gained exposure to role models other than those within their departments. During the 1992-93 academic year the following individuals have participated in the Visiting Lecturer Program.

Sharon L. Ramsey, Staff Computer Scientist, Process Control & Computer Technology Division of Alcoa Laboratories (Oct. 1992) spoke on Computer Visualization and the Motif GUI.

Tom Zipoli, Engineer with Sun Microsystems (Feb. 1993) conducted the Sunsparc New Users Seminar.

Melvin Blackwell Software Consultant and Entrepreneur (April 1993) Computers in the World of Small Businesses.

Darnley Archer, Programmer Analyst for St. Mary's College of Maryland (March 1993) conducted an Introduction to Windows.

Dr. Guy Hogan from Norfolk State University (Feb. 1993) was the guest speaker during our Sixth Annual Colloquium on Black Mathematicians and Computer Scientists.

Mark Gilicinski from the National Security Agency (July 1992). spoke on Large Software Development Projects during .

Student/Sponsor Travel Component

NAFEO High Tech Expo

Eight students (Stephanie Vaughan, Renee Basnight, Tammy Askew, Karen Felton, Belinda Banks, Cory Cooper, Willie Basnight and Deborah Jones) were invited to make research presentations during the Sixth Annual NAFEO High Tech Expo. The EXPO was held in Washington, DC Friday April 2, 1993. Dr. Jenkins, ECSU's Chancellor, served as Chairman of the 1993 NAFEO CONFERENCE AND HIGH TECH EXPO. In the midst of that demanding schedule, he made a point to be in attendance for our student's NAFEO sessions and to personally introduce each student presentation. He is very committed to nurturing these scholars.

NAAAS

Nine students (Karen Felton, Michelle Brown-Emmanuel, Belinda Banks, Cory Cooper, Deborah Jones, Stephanie Vaughan, Wayman White, Willie Basnight and Renee Basnight) made research presentations during the NAAAS (National Association of African American Studies) Conference held in Petersburg, VA in February 1993. This was the first time that student abstracts had been accepted. The conference committee is now considering making student research presentations a permanent part of the schedule.

NERC

Two students made research presentations at the NERC (National Energy Research Conference) held in San Juan, Puerto Rico, April 26-28, 1993. Karen Felton and Michelle Brown-Emmanuel were also part of the student roundtable discussion. During the roundtable, Science and Engineering Undergraduate and Graduate Students shared issues affecting their performance in the classroom.

Females in Computer Science Symposium

Two students (Renee Basnight and Alisa Hart) were selected to attend the Females in Computer Science Symposium held at George Washington University in Washington, DC. May 1993.

Forum on Undergraduate Research Experience

Eight Students (Stephanie Vaughan, Renee Basnight, Tammy Askew, Karen Felton, Belinda Banks, Cory Cooper, Willie Basnight and Deborah Jones) attended the Forum on Undergraduate Research Experience of Minority Undergraduate Science and Engineering Students and workshop on Graduate School Opportunities held in Atlanta, Ga., Oct. 15, 1993.

GRE and Graduate School Workshop

Five Students (Stephanie Vaughan, Renee Basnight, Michelle Brown-Emmanuel, Wayman White, and Jane Shimpach) attended the Workshop on Graduate School and the GRE sponsored by the Educational Testing Service in Raleigh, NC in November of 1992.

B. Faculty Activities supported by this ONR grant (please respond briefly where applicable):

*Mentoring activities: how were mentors selected and trained? What were the major mentoring activities? How frequently did mentors meet with students?

Part 1B.

Dr. George Edmonds retired during the 1992 school year. As such, Dr. Linda Hayden assumed primary responsibility for mentoring the ISSP students. Mr. George Coleman, Instructor of Mathematics accompanied the student on their trip to the NAFEO conference in Washington, DC. Dr. Hayden met with the ISSP students informally on a weekly basis.

It was a policy to have the ISSP students serve as tutors for other students. The tutoring assignments allowed the ISSP students to keep current on material learned in previous classes. Research shows that students who serve as tutors gain a deeper insight into the material.

Many of the ISSP students were assigned to work in the Macintosh laboratory giving technical assistance to their classmates. This policy gave the ISSP students access to and time to review the individual training modules available in the laboratory. Further, Renee Basnight, Willie Basnight, Deborah Jones, Michelle Brown-Emmanual, and Wayman White, all ISSP computer science majors, worked under the supervision of Dr. Hayden to design and carry out a Macintosh network training program from which all ISSP students could benefit.

A concerted effort was made to insure that the ISSP students made application to graduate schools and applied for financial assistance. Both Drs. Edmonds and Hayden wrote letters of recommendation and reviewed the students applications before mailing.

To compliment the efforts made with in the CCMP departments, or ISSP students were strongly advised to take full advantage of the ECSU campus services. ECSU has already in place a host of student services including individual and group counseling and developmental group activities. Also contributing to the nurturing atmosphere at ECSU is the fact that we have only a 5% rate of adjunct faculty. Further, the university regularly holds family meetings both campus wide and within the individual department. Social activities are scheduled each semester to allow faculty and students to relate outside of the classroom. This includes both a Christmas dinner in the fall and a cookout in the spring. Faculty and students work together to make these events a success.

We at ECSU have a long and proud history of mentoring minority students. Many of whom are first generation college students. Recognizing that, we maintain contact with the homes and families of our students and invite their families to contact us. As a result of these concentrated mentoring efforts the 1993 graduating class included four ISSP students:

Renee Basnight	Computer Science
Wayman White	Computer Science
Stephanie Vaughan	Computer Science
Deborah Jones	Computer Science

Renee Basnight and Deborah Jones will be returning to the HU-ISSP program. Wayman White has been admitted to the Masters Program at Old Dominion University. Stephanie Vaughan and Renee Basnight are being considered for financial aid at University of Alabama at Birmingham. Deborah Jones has no plans at this time.

*New Faculty hires: provide number, name, departments, background, and teaching responsibilities.

No new faculty were hired under this ONR program

*Faculty research highlights: provide topics, performance sites, publications, presentations.

In the past, research has not been a part of our mission statement. However, our current mission statement, as revised by the State of North Carolina, states that research is now and should continue to be a focal point of the educational experience provided to our students. ECSU has a proud and successful history of graduating students in the fields of mathematics, computer science, biology, chemistry, and physics. In increasing numbers, our students are choosing to pursue graduate studies after graduation from ECSU.

The following is a complete list of all faculty in the Department of Mathematics and Computer Science and their current research interest.

<u>Name</u>	<u>Degree</u>	<u>Interest</u>
Barker, William W	MS	Aeronautics
Bocraye, Tesfa G.	MS	Database and Networking
Coleman, George W.	MS	Partial Differential Equations
Doraiswamy, Ida	Ph.D	Group Theory
Hayden, Linda B.	Ph.D	On-Line Documentation & Parallel Processing

Houston Johnny L.	Ph.D	Numerical Grid Generation
Katri, Anil	MS	Operating Systems & Networks
Lawrence, Georgia S.	Ph.D	Statistics & Math Ed.
Mannan, Muhammad A.	Ph.D	Categorical Analysis & Statistics
Nemecek, Stephen M.	Ph.D	Data Flow synchronization Unit of Measure in Prog.
O'Dell, Carol	Ed.D	Mathematics Education
Owunwanne, Daniel	MS	Database Fault Tolerance & Computer Graphics
Sachdev, Sohindar S.	Ed.D	Mathematical Modeling
Sengupta, Dipendra C.	Ph.D	Complex Analysis, Riemann Surfaces
Sengupta, Jharna D.	Ph.D	Reimann Surfaces & Kleinian Groups, Chaos
Zhang, Jingyuan	Ph.D	Image Processing & Computer Vision

The research interest of faculty members in the Department of Physical Science (chemistry and physics) involves metal-insulator transition and comparative studies of three species of Rouwalfia. Other research interest in this department include laser spectroscopy and the effect of carcinogens on biological macromolecules.

As a statement of the qualifications of our students and their performance when given the chance, three of the four awards for most outstanding summer research projects given in 1992 by Hampton University were awarded to ECSU students.

*Faculty self-improvement activities: where were these performed and what were the activities?

No faculty self-improvement activities were funded through this ONR program

*Visiting faculty: provide names, departmental affiliations, and major activities.

No visiting faculty were acquired through this program.
*Other faculty activities under this grant which you wish to report.

There were no other faculty activities under this grant.

C. Curriculum changes/enhancements supported by this ONR grant.

No curriculum changes/enhancements were supported under this grant.

Part 1C.

No curriculum changes/enhancements were supported under this grant.

D. Programs for students supported by this ONR grant (In this section please discuss recruiting activities, summer educational/enrichment programs, research opportunities, internships, mentoring programs, problems associated with mentoring programs)

Part 1D.

For the summer of 1993, Hampton University(HU) program officials requested ECSU to select 12 students to participate in the HU-ISSP program. The Hampton University ISSP program offer students the opportunity to take major courses which are not offered at ECSU. During the ISSP program, students have the opportunity to perform research (at the appropriate level) within their discipline. The following is a complete listing of all the 1993 summer ISSP program participants from ECSU.

1993 ISSP Students

<u><i>Students (12)</i></u>	<u><i>Classification*</i></u>	<u><i>Major</i></u>
<i>Aquita Robinson</i>	<i>Soph</i>	<i>Chemistry</i>
<i>Nakesha Riddick</i>	<i>Junior</i>	<i>Computer Science</i>
<i>Michelle Brown-Emmanual</i>	<i>Senior</i>	<i>Computer Science</i>
<i>Tammy Askew</i>	<i>Senior</i>	<i>Mathematics</i>
<i>Renee Basnight</i>	<i>Graduate</i>	<i>Computer Science</i>
<i>Darron Jefferies</i>	<i>Soph</i>	<i>Physics</i>
<i>Richard Flood</i>	<i>Soph</i>	<i>Physics</i>
<i>Clarence Jones</i>	<i>Soph</i>	<i>Physics</i>
<i>Belinda Banks</i>	<i>junior</i>	<i>Computer Science</i>
<i>Alisha Hart</i>	<i>junior</i>	<i>Computer Science</i>
<i>Bonnie Garner</i>	<i>Junior</i>	<i>Computer Science</i>
<i>Deborah Jones</i>	<i>sophomore</i>	<i>Computer Science</i>

The Mean GPA of all 1993 participants is 3.12

** classifications are as of Summer '93*

E. Facilities and equipment supported by this grant (purchases, impact on program)

Part 1E. Macintosh Network

The following is a list of hardware purchases which have enhanced the Macintosh network of computers. We have also added ethernet cards to the LC computers and the IICI computer.

Hitachi VHS CAMCORDER
6 Mac classic II bundle w/ personal laser printer
cdrom drive
HP ScanJet II scanner
Fotoman Digital Camera
tv projection panel

The following is a list of software and reference material purchased to support the student researchers and the Macintosh network.

Minix
MACDRAW PRO
IMAGES WITH IMPACT-PEOPLE 1
ALDUS 4.0 ADV. VIDEO
ALDUS 4.0 INTRO VIDEO
M.SOFT WORKS 2.0 ADV VIDEO
STUDYWARE GRE
STUDYWARE SAT
DRAWART CLIPART BUS & ED
DRAWART ACCENTS & BORDERS
101 SCRIPTS & BUTTONS H.CARD
HYPERTOOL 2.1
MACPRINT 1.2
SWIVELART 3D CLIPART
hypercard 2.0 creating cards & stacks
system 7 using the Mac interface video
adv. system 7 features
Ind. training for pagemaker 4.0
microsoft works adv. database
+ database & form letters
microsoft works spreadsheet
macintosh survival course
Mac repair & Upgrade secrets
folder bolts
Macintosh programming fundamentals

mega rom 2.1 cdrom
100ns 2mb simms
clickart cdrom
bannermania cdrom
computer cleaning kit
clickart vol 5 b orders
cd software encycl., atlas, sci
development software & tutorials
microsoft works 3.0
POSTERWORKS
effects specialist
multiclip
programmer cd reference
magnet
BBS in a box vol VII
disk express II 2.10
the system 7 book
using the Mac with system 7
The Mac classic book
Using MacDraw Pro
typestyler
norton utilities
power users toolkit
randonhouse encyclopedia
wordperfect office
cd7 super library
gigabyte 2.0 cdrom

F. Specific program objectives for next year (please be as quantitative as possible).

Part 1F.

This program is scheduled to end in October. We have however scheduled several lectures for the months of August and September. We have also submitted a proposal to the Department of Defense entitled "Nurturing ECSU Research Talent (NERT)" in response to the recent DOD Infrastructure Support Program for HBCU/MIs. We propose to expand the scope of the current program to include faculty, precollege and non-ISSP ECSU students. The number which DOD has assigned to this proposal is #004. This will be an initiative directed specifically towards increasing the number of underrepresented minorities obtaining undergraduate and graduate degrees in CCMP fields.

The proposed program will have six components

- Component #1: State-of-the art computer equipment
- Component #2 A visiting lecturer series
- Component #3: Students pay & faculty release time
- Component #4 Student/sponsor travel program
- Component #5: Research training seminars
- Component #6: Precollege outreach

The first five components address ECSU infrastructure. The precollege component proposes first to enhance the ECSU Annual State Mathematics Contest in ways which will recognize the top minority mathematics precollege achievers in our 16 county region of North Carolina and encourage those minority participants who show potential. Also in the precollege component, we will provide a dial-up modem which will allow local school districts to access the resources of our campus and the North Carolina Supercomputer Center (NCSC).

COMPONENT #1: RESEARCH SUPPORT LABORATORY

Objectives: To increase the quality of education provided in engineering, science, and mathematics. To acquire instructional equipment deemed essential for the program's success. To enhance academic and research capabilities of ECSU.

Action: Purchase and install a network of Sunsparc, Intel 486 PCs and Macintosh computers. Allow advanced students to assume much of the responsibility for installing the network. Install a dial-up modem allowing convenient access to the North Carolina Supercomputer center and the Internet.

This component of the NERT program would allow us to broaden the computer research support made available to our CCMP majors. We suggest purchasing several types of computing equipment: Macintosh, Sun workstations and 486 Intel PCs. These are the types of computers for which the CCMP faculty have expressed a need. In addition, we expect to furnish faculty with convenient access to the Cray supercomputer and to the internet through a dedicated line. We currently have a dedicated line however, the attached budget includes a modem, multiplexor and cables to bring the proposed research center on line.

COMPONENT #2: VISITING LECTURER

Objectives: To provide support for visiting faculty and guest lecturers. To encourage students to consider seriously and pursue careers as engineering, science and mathematics faculty at HBCU/MIs. To increase students and faculty association with working engineers, scientist and faculty from other universities.

Action: Establish a visiting CCMP lecturer series. Devote one lecture each semester to HBCU/MI University Teaching Careers.

The Visiting Lecturer Component of the budget would allow us to invite 4-5 outside science researchers to our campus each semester. The Visiting Lecturer Program will be designed to expose our ISSP students to role models who are currently involved in scientific research. Contact with outside researchers would also raise the student's level of understanding as to the importance of and the nature of scientific research. The visiting lecturers will be chosen from professional researchers in universities, private industry and government laboratories. They will be paid honoraria and travel expenses.

Each semester, one lecture will be devoted to HBCU/MI University Teaching Careers. Invited speakers for the "HBCU/MI University Teaching Careers" seminars will be selected from a variety of HBCU/MIs and will reflect a mixture of baccalaureate and graduate institutions.

COMPONENT #3: STUDENT PAY & FACULTY RELEASE TIME

Objectives: To provide financial support for students selected for the program. Financial support will be limited to U.S. Citizens. To allow faculty release time.

Action: Hire students to work as computer research lab and CCMP teaching assistants. Provide release time for CCMP faculty who propose to write grant proposals, prepare publications or other scholarly

activities. Hire two additional instructors.

Included in the budget is a request for release time for CCMP faculty members. Release time would be allocated to the PI to allow time to coordinate the program, to supervise student researchers and to write required ONR reports. The remaining releases would be allocated to CCMP faculty members. Much of the success we enjoy with regards to mentoring students comes from the fact that we do not rely heavily on the use of part-time or adjunct faculty. To retain this edge and still allow faculty release time we are proposing to hire one full time professor and a full time instructor who will also provide laboratory support.

Of the 40 students/year to be served by this program, we anticipate hiring all as research/teaching assistants. The 40 assistants will be paid at the rate of \$10.00 per hour for approximately 15 hours of work per week, over a 35 week year. Each would then earn a gross of \$5250.00. Tuition and fees at ECSU for in-state boarding students cost \$3640.00/yr. Research laboratory assistants could then earn enough money to cover all, of their college expenses as well as benefit from other program components.

The primary reason we are proposing that the students work rather than offer scholarships is to encourage students to have daily contact with their research advisors. Daily contact helps to build the mentoring relationship; insures steady progress on research assignments; and facilitates communication.

COMPONENT #4: STUDENT/SPONSOR TRAVEL

Objectives: To provide supporting activities for students selected for the program. To provide academic enhancement activities. To enhance the mentoring relationship between faculty and students.

Action: Initiate a student/sponsor travel program. Provide funds specifically for use when students accompany faculty to professional meetings and when students/faculty make research presentations.

This component is very important. When combined with the second component it provides our student participants more exposure to experiences outside of those offered by the department. Although not easy to do, faculty members occasionally find the funds to travel to conferences and meetings relevant to their discipline. They would consider taking students if the funds were available. However, funds for student travel are even more scarce than funds for faculty travel. In scientific fields, the

information available at conferences and meetings reflect the current state-of-the-art and is often not available, in a timely fashion, through print media. In addition, the association and contacts with other scientists is often equally as valuable.

With the anticipation of ECSU-ISSP student expanded research activity, we have included a student/sponsor travel component in this proposal. This would allow students to travel, with their sponsors, to regional/national meetings, conferences and field trips. There they will present their research findings and associate with other students who are engaged in research activities.

In the last 2 years ISSP students and sponsors have travelled to:

National Mathematics Assoc. of America Meeting (MAA) in Maryland
National Assoc. Of Computing Machinery Meeting (ACM) in Texas
Supercomputer Center in Raleigh, NC
Microsoft Software Seminars in Greensboro, NC
Regional ACM Conference in Raleigh, NC
National Educational Computing Conference in Pheonix, AZ

Students have presented their research at the following conferences:

Forum on Undergraduate Research Experiences of Minority Undergraduate Science and Engineering Students Workshop in Atlanta, GA
Seizing Opportunities for Advancing research Scholars(SOAR) conference in Raleigh, NC
National Association for African-American Studies in Petersburg, VA
NAFEO High Tech Expo in Washington, DC

Chancellor note:

ECSU's chancellor, Dr. Jimmy Jenkins, wrote personally to each of the ISSP students attending these conferences, congratulating them on their achievements and encouraging them in their research efforts. The students were delighted and several have framed that letter. (Refer to his letter of congratulations in the appendix)

Dr. Jenkins served as Chairman of the 1993 NAFEO CONFERENCE AND HIGH TECH EXPO. In the mist of that demanding schedule, he made a point to be in attendance for our student's NAFEO sessions and to personally introduce each student presentation. He is very committed to nurturing these scholars.

COMPONENT #5: RESEARCH TRAINING SEMINARS

Objectives:To encourage students to consider seriously and pursue careers as engineering, science and mathematics faculty at HBCU/MIs. To provide training on new equipment for faculty and students.

Action: Provide training seminars to show faculty and students uses for the newly acquired hardware and software. Allow advanced students to assume

much of the teaching responsibility for the training seminars.

Each research training seminar will focus on computer hardware or a software tool, available in the research laboratory and on the resources available on the internet. We expect to hold several training seminars each semester.

All students participating in the program will be required to attend the research training seminars. CCMP faculty would also be encouraged to attend the seminars. Towards the goal of encouraging these undergraduates to consider seriously and pursue careers as engineering, science and mathematics faculty at HBCU/MI, some promising students will be hired as teaching assistants. These will be advanced research laboratory assistants who express an interest in career as HBCU/MI faculty members. The program students hired as teaching assistants will assume much of the responsibility for conducting the training seminars.

Suggestions for software purchases will be solicited from faculty members. We would also invite their suggestions for seminar topics and encourage them to discuss their hardware information and software information support needs with us. The seminars will be used to address those expressed needs for information.

COMPONENT #6: PRECOLLEGE OUTREACH

Objectives: To recruit high school students who have outstanding grades and test scores in engineering, science and mathematics. To encourage talented mathematics precollege students to stay in the math/science pipeline.

Action: Identify minority students participating in the Annual State Mathematics Contest. Initiate a DOD/ECSU award for minorities who score in the top 50%. Provide financial aid information. Assist with the college application process. Provide travel funds for these students to attend special CCMP and ECSU events. Install a dial-up modem allowing local school districts to have convenient access to the North Carolina Supercomputing Center and the Internet.

ENHANCEMENT OF THE STATE MATHEMATICS CONTEST

The precollege component of this project is designed to enhance a program that currently exist on the campus of Elizabeth City State University, The Annual State Mathematics Contest. Each spring the ECSU

Annual State Mathematics contest brings to our campus over three hundred of the brightest and most talented mathematics students in our surrounding 16 county region. The contest is open to public, private and parochial schools, in the State of North Carolina.

Students are tested in the areas of Algebra I, Algebra II, Geometry, and Comprehensive (advanced mathematics). The top 15% of our winners go on to the second round of competition held in Raleigh, North Carolina. This contest gives students and schools the opportunity to win trophies and certificates in recognition of their accomplishments. Dr. Hayden organized this contest on our campus in 1980 and continues to serve as the contest coordinator.

The purpose of the mathematics contest is two-fold.

1. To stimulate interest in mathematics by encouraging more students to include mathematics in their programs of study, and thereby raise the level of mathematical competence in North Carolina.
2. To honor those students who are outstanding in their knowledge of mathematics through appropriate recognition at the contest, in their respective schools and in their communities.

We propose to enhance the current mathematics contest in two ways which will recognize the top minority mathematics achievers and encourage those minority participants who show potential. This will be a special effort to nurture these talented minority mathematics precollege students and to keep them in the math/science pipeline.

Each minority student participating in the mathematics contest will be awarded a specially designed ONR participation certificate. In the spirit of the contest, this award would serve to further encourage these talented minority students to continue to study mathematics. This technique would also serve to identify talented minority mathematics students so that they can be invited back to our institution for future events. In particular, we would like to extend invitations to these students to attend visiting lecturer seminars. It is our intent to form a bond with these students which will allow us to nurture their interest in mathematics.

Eligible participants in the mathematics contest who scores in the top 50% will be presented a DOD/ECSU Minority Mathematics Achievers Award. One hundred dollar travel awards will be made to the participating school, in the name of each minority student who scores in the top 50%.

We would encourage these funds to be spent on travel arrangements to attend special events at ECSU.

In addition, the graduating seniors who receive the award will be provided information on the INCENTIVE SCHOLARSHIP PROGRAM and other means of financing their education. We plan to assist them in completing applications to ECSU. Seniors would have to meet ECSU entrance criteria and major in a CCMP discipline.

DIAL-UP MODEM

This extreme northeast corner of North Carolina is one of the poorest and most rural regions of the state. It is a region which has a very poorly developed technological and industrial infrastructure. In this region, the Macintosh network at ECSU, although targeted for the ISSP students, has been eagerly greeted by the campus and community as a sign of progress and has inspired local school districts to seek us out. School officials including Superintendent Frederick Denning, have visited ECSU several times during the last year to express their dire need for ECSU to serve as a local resource for higher education resources and for Internet access. In the course of these meetings representatives from the North Carolina Supercomputing Center have been present.(Refer to letters in the appendix)

The North Carolina Supercomputing Center(NCSC) has joined in their quest for assistance. NCSC has agreed to make their supercomputing resources available to local school districts. The most efficient means of connecting northeastern North Carolina to the resources of NCSC is through ECSU. ECSU's computing center currently has a dedicated line to the NCSC by which we can access the Internet. However, at this time only our Library has been linked to the that dedicated line. There is no dial-up capability nor are the buildings housing CCMP faculty members on the campus LAN.

These local school officials and NCSC are making an aggressive effort to improve science, mathematics and technology education in northeastern North Carolina. ECSU is proposing to join in that effort. We have agreed to host portions of the training and are currently scheduled to host teacher training sessions during the summer of 1993. The school district has made several other specific request of ECSU. One of their request is that the Macintosh network of computers funded by ONR be used for these training sessions. Since the ISSP students will be away during that time, we have agreed to the request and the Macintosh network will be used for that training.

A second request is that ECSU provide low cost local dial-up access to NCSC and the Internet resources. The funds requested in this proposal would be used to install a dial-up modem in our computer center which

will allow local school districts and CCMP faculty to access NCSC and the Internet. To orient CCMP faculty to NCSC and Internet resources, NCSC has agreed to allow a team of 3 CCMP faculty members to attend a two week supercomputing workshop scheduled from May 19, 1993 to June 9, 1993.

We expect this program to result in several very important outcomes. First we expect, on a larger scale, to nurture the research abilities of our many highly motivated, academically talented CCMP majors. Second, we expect to provide the release time, computer hardware, software and information support that the CCMP faculty need to engage students in productive research projects. Third, we will expand the Math Contest to encourage mathematically talented precollege minority students in northeastern North Carolina to remain in the math/science pipeline. Finally, we expect to enhance our current connection to the NCSC allowing local school districts and CCMP faculty convenient, low cost access.

It is our intent next year to continue to assist our ISSP student to identify graduate programs which match their expressed research interest. We will also continue to assist them in locating fellowships and assistantships to support themselves during their graduate studies.

CCMP faculty have expressed a need for the acquisition of SAS statistical package Aldus Persuasion and MAPLE for the Macintosh network. They also would like to have more access to the network for use with non-ISSP students.

Further, our CCMP faculty and students need access to workstations. CCMP departments are severely limited with respect to the computer hardware and software available to sustain any research efforts. Faculty also require release time to more fully engage students in research.

Part II Questionnaire

1. Please provide the following information (where applicable about each of the graduated seniors who participated in your program last year:

Part II Questionnaire

1. This year we had four students to graduate in May 1993: Renee Basnight, Stephanie Vaughan, Wayman White and Deborah Jones. These ISSP students are just a sampling of the very talented and highly motivated minority ECSU students.

Renee Basnight has attended the ISSP program for three summers the program. She is currently taking graduate computer science classes at Hampton University. Renee graduated cum laude from ECSU and plans to attend graduate school at the University of Alabama at Birmingham.

Stephanie Vaughan completed all her course work in December of 1992. During the Spring semester she completed an internship with the Science and Engineering Research Program (SERS). Stephanie graduated cum laude from ECSU. She attended the ISSP program during the summer of 1992. Stephanie plans to attend graduate school at the University of Alabama at Birmingham.

Deborah Jones has attended the ISSP program for the past two summers. At this time she has no plans to attend graduate school in the fall. She is however taking graduate computer science classes at Hampton University this summer.

Wayman White graduated cum laude in computer science. He completed an internship with the area Coast Guard Base during Spring semester 1993. Wayman is awaiting information on his graduate school application to the University of Alabama at Birmingham.

2. How many students participated in science projects last year? On campus (Please identify students, project title, and mentors):
Off campus (please identify students, project title, mentors, and sites for off campus research):

NAAAS '93 Presentors List

First Name	Last Name	Institution	City	State	Zip Code
Professor Candice	Adams		Radford	VA	24141
Professor Tunde	Adeleke	Loyola University	New Orleans	LA	70118
Dr. E. Curtis	Alexander	ECA Associates	Chesapeake	VA	23320
Dr. Horus	Alkebu-Lan	Virginia State University	Petersburg	VA	23806
Dr. Brenda	Allen	North Carolina State University	Raleigh	NC	27695
Ms. Tammy	Askew	Elizabeth City State University	Elizabeth City	NC	27909
Dr. Kenneth	Bagley	Carlton College	Northfield	MN	55057
Ms. Belinda	Banks	Elizabeth City State University	Elizabeth City	NC	27909
Ms. Renee	Basnight	Elizabeth City State University	Elizabeth City	NC	27909
Mr. Willie	Basnight	Elizabeth City State University	Elizabeth City	NC	27909
Dr. Valery Y.R.	Bates-Brown	Virginia State University	Petersburg	VA	23806
Dr. Reginald	Bess	Northwestern State University	Natchitoches	LA	71497
Dr. Leon Wright	Bey	Virginia State University	Petersburg	VA	23806
Dr. Lois	Blackburn	University of Idaho	Moscow	ID	83843
Dr. Olwyn M.	Blouet	Virginia State University	Petersburg	VA	23806
Professor Evelyn	Branch	Central State University	Wilberforce	OH	45384
Dr. Aylwin S.	Bridges		Germantown	MD	20874
Professor Christopher	Brooks	Virginia Commonwealth University	Richmond	VA	23284
Dr. Geraldine	Brooks-Harper	Howard University	Washington	DC	20059
Professor Annie	Brown	Howard University	Washington	DC	20059
Dr. Phiefer L.	Brown	Fisk University	Nashville	TN	37208
Ms. Michelle	Brown-Emmanuel	Elizabeth City State University	Elizabeth City	NC	27909
Dr. William	Buchanan	University of North Carolina at Asheville	Asheville	NC	28804
Dr. John	Burrows	Talladega College	Talladega	AL	35160
Dr. Jacqueline	Caesar	National University	San Diego	CA	92108
Mr. Fedenck	Case	University of Toronto	Toronto	CANADA	M5S 1A1
Dr. Angela E.	Chamblee	Clark-Atlanta University	Atlanta	GA	30314
Professor Balance T.P.	Chow	Rollins College	Winter Park	FL	32789
Dr. Vernon	Clark	Virginia State University	Petersburg	VA	23806
Dr. George	Clette	St. Augustine College	Durham	NC	27703
Mr. Cory	Cooper	Elizabeth City State University	Elizabeth City	NC	27909
Dr. Margaret	Corboy	University of South Carolina at Aiken	Aiken	SC	29801
Dr. Samuel	Creighton	Virginia State University	Petersburg	VA	23806
Professor Cynthia	Davis	University of Maryland at College Park	College Park	MD	20742
Professor Nicolas	Desai	Johnston C. Smith University	Charlotte	NC	28216
Dr. Debbie	Dewitt	USC-Costal Carolina College	Conway	SC	29526
Professor Shirley	Dort	Virginia State University	Petersburg	VA	23806
Dr. Abdur-Rahim Dib	Dudar		Atlanta	GA	30345
Professor Dixie	Dysart	Auburn University	Auburn	AL	36849
Professor Sheila	Easley	Fisk University	Nashville	TN	37208
Professor Richard	Ellis	Virginia Polytechnic Institute & State Univer	Blacksburg	VA	24061
Professor Chuck	Ethendge	McMurray University	Abilene	TX	79697
Dr. Frank	Evetsemitan	McKendree College	Lebanon	IL	62254
Dr. Kwabena	Faheem Ashanti	North Carolina State University	Raleigh	NC	27695
Ms. Karen L.	Felton	Elizabeth City State University	Elizabeth City	NC	27909
Professor Betty	Fitch	Virginia State University	Petersburg	VA	23806
Professor Charlotte	Fitzgerald	Randolph-Macon College	Ashland	VA	23005
Prof. Charles	Flynn	Virginia State University	Petersburg	VA	23806
Dr. Susan	Frazier-Kouassi	The College of Wooster	Wooster	OH	44691
Dr. Stanley	Gaines	The University of North Carolina at Chapel	Chapel Hill	NC	27599
Professor R.V.	Gomez	Anne Arendel Community College	Arnold	MD	21012
Professor Ruby M.	Gourdine	Howard University	Washington	DC	20059
Ms. Emily	Grant DeCarlo	Virginia State University	Petersburg	VA	23806
Professor Oliver	Green	Florida State University	Tallahassee	FL	32301
Dr. Sadie	Gregory	Virginia State University	Petersburg	VA	23806
Dr. William F.	Gunn, Jr.	Benedict College	Columbia	SC	29212
Professor LaVerne	Gyant	The Pennsylvania State University	University Park	PA	16802
Professor John	Haley	The University of North Carolina at Wilmimg	Wilmington	NC	28403
Ms. Paula	Hanson	Virginia State University	Petersburg	VA	23806
Donna Akiba Sullivan	Harper	Spelman College	Atlanta	GA	30314

NAAAS '98 Presenters List

First Name	Last Name	Institution	City	State	Zip Code
Dr. Gerald J.	Smith	Paine College	Augusta	GA	30910
Dr. Jessie C.	Smith	Fisk University	Nashville	TN	
Dr. Thomas	Smyth	University of South Carolina at Aiken	Aiken	SC	29801
Professor Cudore	Snell	Howard University	Washington	DC	20059
Dr. Peggy	Stevenson	Claflin College	Orangeburg	SC	29115
Professor Valeria	Temple-Thompson	Virginia State University	Petersburg	VA	23806
Professor Cornell	Thomas	Texas Christian University	Fort Worth	TX	76129
Dr. Vykuntapathi	Thota	Virginia State University	Petersburg	VA	23806
Professor Robert	Turner		Rochester	NY	14609
Professor Tim	Tyson	Duke University	Durham	NC	27706
Professor Eugene	Vango	Virginia State University	Petersburg	VA	23806
Dr. Jim	Varn	Morris College	Sumter	SC	29150
Ms. Stephanie	Vaughan	Elizabeth City State University	Elizabeth City	NC	27909
Professor Susan M.	Wadsworth	Fitchburg State College	Fitchburg	MA	01420
Professor Xi	Wang	University of Rochester	Rochester	NY	14627
Ms. Cheryl	Warner		Richmond	VA	23231
Dr. Michael	Washington	Northern Kentucky University	Highland Heights	KY	41099
Mrs. Margaret	Washnitzer		Washington	DC	20015
Professor Kathryn C.	Weigel	Virginia State University	Petersburg	VA	23806
Mr. Wayman	White	Elizabeth City State University	Elizabeth City	NC	27909
Ms. Arletha	Williams	Temple University	Philadelphia	PA	
Professor Carlton	Wilson	North Carolina Central University	Durham	NC	27707
Dr. Mary	Young	The College of Wooster	Wooster	OH	44691
Ms. Patricia	Young	Western Illinois University	Macomb	IL	61455

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6th ANNUAL NAFEO HI TECH EXPO PRESENTATION

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No:	P:Time	School	Name	Gvn Name	Major	Class	Project
1	2:35	Grambling State University	Adams	Veronica	Criminal Justice	Sr.	ELECTRONIC MONITORING
1	2:40	Grambling State University	Howard	Willie	Sociology/Psychology	Sr.	THE EFFECT OF COMPUTERS
1	2:45	Grambling State University	Womble	Winifred	Sociology	Sr.	THE EFFECT OF COMPUTERS
1	2:50	Elizabeth City State University	Felton	Karen	Chemistry	Jr.	ESTERIFICATION OF 20-
1	2:55	Kentucky State University	Watson	Andurea	Biology	Sr.	EFFECTS OF ARSENIC IN
1	3:00	Fayetteville State University	Allen	Sherrice	Biology	Grad	FIDELITY OF DNA SYNT
1	3:05	LeMoyne-Owen College	Strong	Leslie	Natural Science	Soph.	THERMOREGULATION U
1	3:10	Grambling State University	Donatto	Ursula	Physics	Sr.	MAGNETIC CHARACTER
1	3:15	Oakwood College	Woodbine	Donna	Biochemistry	Sr.	SIDEROPHORE IDENTIFI
		BREAK					
1	3:30	Coppin State University	Mamun	Shahriar	Math	Sr.	THEORETICAL STUDIES
1	3:35	Delaware State College	Stephens	Desmond	Math	Sr.	AN ANALYSIS OF ALGO
1	3:40	Elizabeth City State University	Brown	Michelle	Computer Sci.	Sr.	ON-LINE STANDARDS M
1	3:45	Elizabeth City State University	White	Wayman	Computer Sci.	Sr.	ON-LINE STANDARDS M
1	3:50	Delaware State College	Scott	Victor	Math/Computer Sci.	Sr.	SIDAS: AN AUTOMATE
1	3:55	Elizabeth City State University	Banks	Belinda	Computer Sci.	Sr.	MUTATION TESTING US
1	4:00	Elizabeth City State University	Basnight	Willie	Computer Sci.	Sr.	MUTATION TESTING US
1	4:05	Elizabeth City State University	Cooper	Cory	Computer Sci.	Jr.	MUTATION TESTING US
1	4:10	Elizabeth City State University	Jones	Deborah	Computer Sci.	Sr.	MUTATION TESTING US
1	4:15	Elizabeth City State University	Basnight	Renee	Computer Sci.	Sr.	MUTATION TESTING US
1	4:20	Grambling State University	Harrison	Dana	Computer Sci.	Jr.	STOCK PREDICTION US
1	4:25	Grambling State University	Washington	SherRonda	Computer Sci.	Jr.	COMMON LISP OBJECT
1	4:30	Delaware State College	Thomas	Willie	Math/Computer Sci.	Sr.	A DATA MANAGEMENT
1	4:35	Grambling State University	Simmons-Cooper	Deborah	Computer Info. Systems	Sr.	STRATEGIC DATA PLAN
		BREAK					
1	4:50	Howard University	Ngong	Antonia	Chemical Engineering	Sr.	EFFECT OF SURFACTAN
1	4:55	Prairie View A&M University	Doakes	Kelley	Chemical Engineering	Sr.	THE ELECTROCATALYT
1	5:00	Central State University	Diallo	Ousman	Mfg. Engineering	Sr.	COORDINATE MEASUR
1	5:15	Central State University	Mesa	Felipe	Mfg. Engineering	Sr.	MECHANICAL DESIGN R
1	5:20	Prairie View A&M University	Sutton	Roy	Electrical Engr.	Sr.	A LOW POWER VIDEO T
1	5:25	Univ. of D.C.	Scott	Ronald	Electrical Engr.	Sr.	COMPUTER CONTROLL
1	5:30	Meharry Medical College	Mgbonyebi	Ozeum		Grad	CADMIUM ACETATE IS
1	5:35	QUESTIONS & ANSWERS					
30							

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HI TECH EXPO PRESENTATIONS -- APPROXIMATE SCHEDULE

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Class	Project	GPA
Sr.	ELECTRONIC MONITORING: IMPLICATIONS FOR ADULT CORRECTIONS IN CRIMINAL JUSTICE	4.00
Sr.	THE EFFECT OF COMPUTER-ASSISTED METHOD ON ACADEMIC ACHIEVEMENT	3.20
Sr.	THE EFFECT OF COMPUTER-ASSISTED METHOD ON ACADEMIC ACHIEVEMENT	3.11
Jr.	ESTERIFICATION OF 20-CARBON FATTY ACIDS INTO PHOSPHOLIPID AND NEUTRAL LIPID FRACTIONS OF DIFFERENT CELL LINES	3.50
Sr.	EFFECTS OF ARSENIC IN THE INTRODUCTION OF CHROMOSOME ALTERATIONS IN CULTURED CHO CELLS	3.40
Grad	FIDELITY OF DNA SYNTHESIS BY HERPES SIMPLEX VIRUS TYPE I DNA POLYMERASE	4.00
Soph.	THERMOREGULATION USING C-FOS	3.29
Sr.	MAGNETIC CHARACTER INVESTIGATION OF HIGHER ALCOHOL SYNTHESIS CU-CO-CR CATALYSTS	3.75
Sr.	SIDEROPHORE IDENTIFICATION AND STRUCTURE	3.68
Sr.	THEORETICAL STUDIES OF WATER CLUSTERS	3.30
Sr.	AN ANALYSIS OF ALGORITHMS FOR SYSTEMATICALLY COMPUTING PYTHAGOREAN TRIPLES	3.99
Sr.	ON-LINE STANDARDS MANUAL	3.35
Sr.	ON-LINE STANDARDS MANUAL	3.20
Sr.	SIDAS: AN AUTOMATED SURVEY INSTRUMENT DESIGN AND ANALYSIS SYSTEM	3.40
Sr.	MUTATION TESTING USING FOUR-STATE FINITE AUTOMATION	3.00
Sr.	MUTATION TESTING USING FOUR-STATE FINITE AUTOMATION	3.00
Jr.	MUTATION TESTING USING FOUR-STATE FINITE AUTOMATION	3.10
Sr.	MUTATION TESTING USING FOUR-STATE FINITE AUTOMATION	3.00
Sr.	MUTATION TESTING USING FOUR-STATE FINITE AUTOMATION	3.30
Jr.	STOCK PREDICTION USING NEURAL NETWORKS MODELS	3.81
Jr.	COMMON LISP OBJECT SYSTEM CRYPTANALYSIS: A BLACKBOARD APPROACH	3.86
Sr.	A DATA MANAGEMENT SYSTEM FOR APPLICATION IN FOREIGN LANGUAGE INSTRUCTION	3.69
ns: Sr.	STRATEGIC DATA PLANNING: A CHALLENGE FOR MANAGEMENT INFORMATION SERVICE	3.54
Sr.	EFFECT OF SURFACTANT DECONTAMINATION	3.44
Sr.	THE ELECTROCATALYTIC PROPERTIES OF PLATINUM ELECTRODES	3.60
Sr.	COORDINATE MEASURING DEVICE FOR CNC MILLING MACHINE	3.99
Sr.	MECHANICAL DESIGN REFINEMENTS FOR THE CSU SLAVE-2 LARGE DEXTEROUS ROBOTIC HAND	3.59
Sr.	A LOW POWER VIDEO TIMING MODULE	3.90
Sr.	COMPUTER CONTROLLED SENSING DEVICE	3.27
Grad	CADMIUM ACETATE IS A POTENT INHIBITOR OF ADRENAL CELL STEROIDGENESIS	3.06

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Academic Affairs

HELEN M. CALDWELL, VICE CHANCELLOR

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ELIZABETH CITY STATE UNIVERSITY

MONDAY, OCTOBER 12, 1992

Mid - Term Week Begins

Volume 3, No. 3
October 15 - 24, 1992

TUESDAY, OCTOBER 13, 1992

Mid - Term Week cont'd

Lyceum Program - Ms. Sebronette Barnes (Soprano)
Moore Hall Auditorium, 8:00 pm

WEDNESDAY, OCTOBER 14, 1992

Mid - Term Week cont'd

THURSDAY, OCTOBER 15, 1992

Mid - Term Week cont'd

Planetarium Shows, Planetarium, J. R. Jenkins Science
Complex, 9:00, 10:00 and 11:00 am (by advance reser-
vation - call 335 - 3SKY or 335 - 3620)

Student Recital, Choral Room, Williams Hall, 2:00 pm
(Music Majors must attend)

Faculty Council Meeting, J. R. Jenkins New Science
Complex, 3:00 pm

Women's Volleyball: ECSU vs Virginia State and
Norfolk State (Home) Vaughan Center, 5:00 pm

FRIDAY, OCTOBER 16, 1992

Mid - Term Week cont'd

SATURDAY, OCTOBER 17, 1992

Mid - Term Week cont'd

GMAT, K. E. White Center, 8:00 am

Football: ECSU vs Bowie State, (away) Bowie, MD
1:30 pm

- SPOTLIGHT -

The following students, participants in the ECSU Home -
Institution Support Program, sponsored by the Office of
Naval Research, have been invited to participate in the
Forum on Undergraduate Research Experience of Minority
Undergraduate Science and Engineering Students and a
workshop on Graduate School Opportunities:

Stephanie Vaughan; Renee Basnight; Tammy Askew; Karen
Felton; and Belinda Banks.

The forum will be held in Atlanta, Georgia October 15 -
17, 1992. The students listed above will give present-
ations of their Summer research experiences. Dr. Linda
Hayden, Dept. of Math and Computer Science, wrote the pro-
posal which provides this excellent opportunity for our
students. She will accompany the group and serve as
sponsor.

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3. How many students dropped out of the program last year? Give reasons why, if known. If possible, please compare these numbers with drop out rates for science and engineering students who did not participate in the ONR program.

None of our ISSP students dropped out last year.

4. Data on student enrollment and performance is requested for the overall science and engineering student body, and for students supported under the ONR grant in order to have an internal comparison at your school.

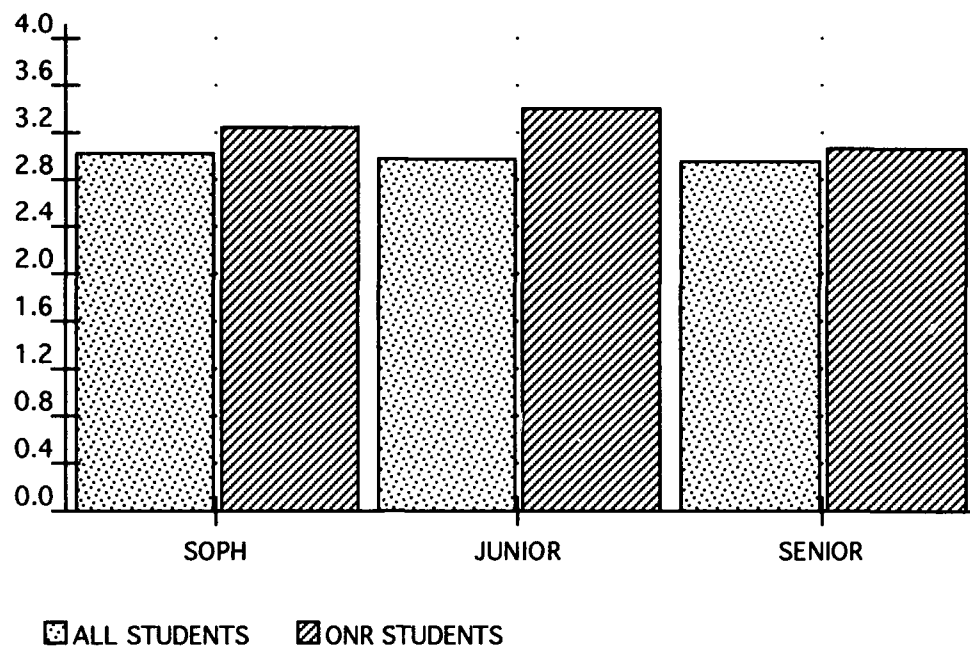
Please see the following table for data. Our Institution does not offer a degree in engineering. Further, we do not select our student for the program until they complete their sophomore year. This is partly because for the first two years of their studies at ECSU they are enrolled in the General Studies program and do not formally select a major until they complete General Studies requirement (For the purpose of advisement however, students tentatively indicate a department of interest to them).

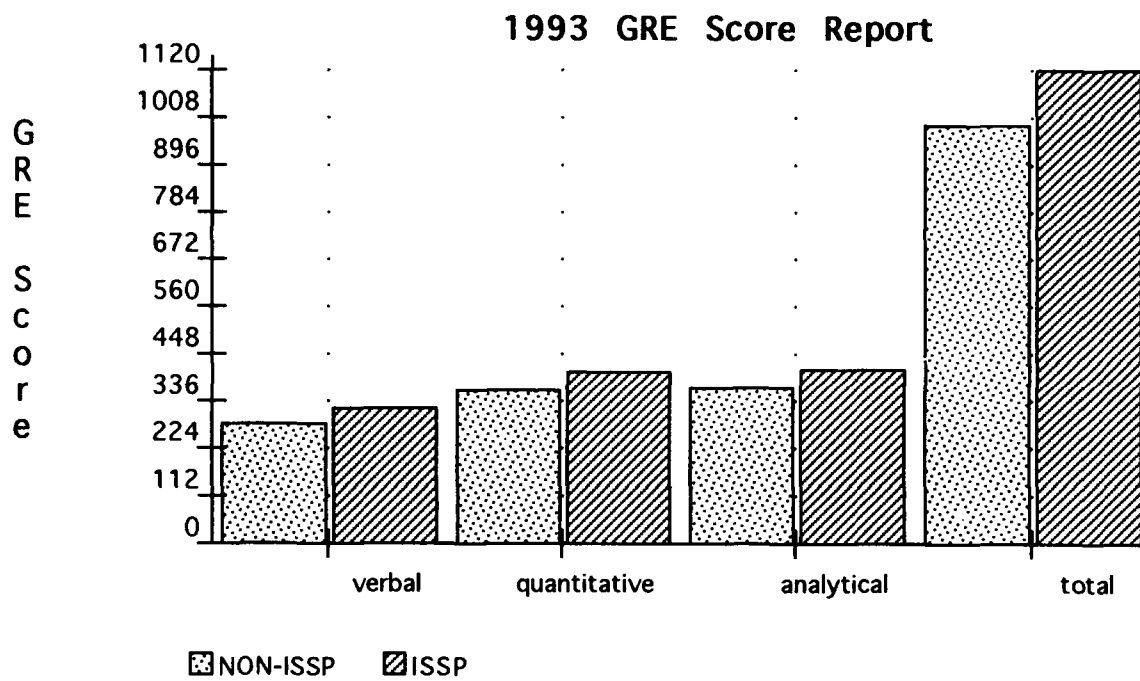
An additional note is made here because the ISSP program involves CCMP majors (chemistry, computer science, mathematics and physics). No biology majors are involved in this program.

<u>Major Discipline</u>	Number of students enrolled at school (by year)				Number of students enrolled in ONR Program (by year)				Number of students graduated		Number Graduate Professional School	
	<u>FR</u>	<u>SO</u>	<u>JR</u>	<u>SR</u>	<u>FR</u>	<u>SO</u>	<u>JR</u>	<u>SR</u>	<u>total</u>	<u>ONR</u>	<u>total</u>	<u>ONR</u>
ENGINEERING	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIOLOGY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHEMISTRY	NA	8	3	9	NA	1	0	1	2	0	0	0
COMPUTER SCIENCE	NA	51	20	3	NA	0	1	5	11	4		3
MATHEMATICS	NA	12	11	19	NA	0	1	4	6	0		0
PHYSICS	NA	6	0	6	NA	3	0	0	1	0		0
TOTALS	NA	77	34	64	NA	4	2	10	20	4		3

<u>Class Year</u>	Mean GPA for all <u>students</u>	Mean GPA for ONR <u>students</u>
Freshman	NA	NA
Sophomore	2.990	3.218
Junior	2.959	3.370
Senior	2.934	3.034

GPA REPORT





	verbal	quantitative	analytical	total
NON-ISSP	271.67	353.33	358.33	983.33
ISSP	313.33	400.00	401.67	1115.00